Using Wrong Tool Causes Injury

**Purpose**

To share “lessons learned” gained from incident investigations through a small group discussion method format.

To understand “lessons learned” through a Systems of Safety viewpoint.

This material was produced by the Labor Institute and the United Steelworkers International Union under grant number SH-17045-08-60-F-42 Susan Harwood Training Grant Program, for the Occupational Safety and Health Administration, U.S. Department of Labor. It does not necessarily reflect the views or policies of the U.S. Department of Labor, nor does mention of trade names, commercial products or organizations imply endorsement by the U. S. Government.

Lessons Learned

Volume 09, Issue 23

© 2009 The Labor Institute
Background Information

Before beginning this Lessons Learned, please review this and the next page which contain information that will introduce the concepts of Lessons Learned and Systems of Safety.

Creating a safe and healthy workplace requires a never ending search for hazards that sometimes are not obvious to us. These hazards exist in every workplace and can be found by using various methods. Lessons Learned are just as the name suggests: learning from incidents to prevent the same or similar incidents from happening again.

**Systems Are Not Created Equal:** Not equal in protection and not equal in prevention.

Using our Systems Focus to uncover system flaws or root causes is only one part of controlling hazards. We also need to look at the systems involved to decide on the best way to deal with the problem. The most effective way to control a hazard is close to its source. The least effective is usually at the level of the person being exposed. The system of safety in which the flaw is identified is not necessarily the system in which you would attempt to correct the flaw.
<table>
<thead>
<tr>
<th>Major Safety System</th>
<th>Design &amp; Engineering</th>
<th>Maintenance &amp; Inspection</th>
<th>Mitigation Devices</th>
<th>Warning Devices</th>
<th>Training &amp; Procedures</th>
<th>Personal Protective Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Prevention</td>
<td>Highest—the first line of defense</td>
<td>Middle—the second line of defense</td>
<td></td>
<td></td>
<td></td>
<td>Lowest—the last line of defense</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>Most Effective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Least Effective</td>
</tr>
<tr>
<td>Goal</td>
<td>To eliminate hazards</td>
<td>To further minimize and control hazards</td>
<td></td>
<td></td>
<td></td>
<td>To protect when higher level systems fail</td>
</tr>
<tr>
<td>EXAMPLES OF SAFETY SUBSYSTEMS**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical</td>
<td>Design and Engineering of Equipment, Processes and Software</td>
<td>Management of Change (MOC)**</td>
<td>Chemical Selection and Substitution</td>
<td>Safe Siting</td>
<td>Work Environment</td>
<td>Work Environment</td>
</tr>
<tr>
<td></td>
<td>Safe Siting</td>
<td>Work Environment</td>
<td>Work Environment</td>
<td>Work Environment</td>
<td>Work Environment</td>
<td>Work Environment</td>
</tr>
<tr>
<td>Staffing</td>
<td>Staffing</td>
<td>Staffing</td>
<td>Staffing</td>
<td>Staffing</td>
<td>Staffing</td>
<td>Staffing</td>
</tr>
<tr>
<td>Skills and Qualifications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Personnel Change (MOPC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Organization and Scheduling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allocation of Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buddy System</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Codes, Standards, and Policies**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HF</td>
<td>HF</td>
<td>HF</td>
<td>HF</td>
<td>HF</td>
<td>HF</td>
<td>HF</td>
</tr>
</tbody>
</table>

HF - Indicates that this subsystem is often included in a category called Human Factors.
* There may be additional subsystems that are not included in this chart. Also, in the workplace many subsystems are interrelated. It may not always be clear that an issue belongs to one subsystem rather than another.
** The Codes, Standards and Policies and Management of Change subsystems listed here are related to Design and Engineering. These subsystems may also be relevant to other systems; for example, Mitigation Devices. When these subsystems relate to systems other than Design and Engineering, they should be considered as part of those other systems, not Design and Engineering.

Revised October 2006
Lessons Learned Statement:

Not having the proper training for the job assigned and not having the proper tool to use for the job, resulted in a worker being injured. *Systems of Safety* are utilized to provide prevention for this type of incident.

Using the **Training and Procedures System of Safety** to make sure that workers are trained on how to perform tasks that are required of them, and what tools must be used to safely perform these tasks, can help prevent these types on incidents.

Using the **Maintenance and Inspection System of Safety** would make sure that the proper tools for the job are available.
Discussion:

A Machine Hand on the No. 4 paper machine was assigned to remove side covers from the machine during a maintenance shutdown. An adjustable wrench was handed to the worker to remove the bolts of the cover. The adjustable wrench was about 12 inches in length. As the worker was trying to loosen one of the bolts, the wrench slipped and his pinky finger got pinched between the metal flange and the wrench. The worker incurred pain, swelling and redness to his finger.

The investigation revealed that this was the first time the worker had performed this task. The task is normally done by a Machine Hand on maintenance shutdowns. The worker was wearing gloves at the time of the incident. The Machine Tender had handed over the adjustable wrench to the worker as the tool to remove the bolts.
Analysis

The Logic Tree is a pictorial representation of a logical process that maps an incident from its occurrence, “the event,” to facts of the incident and the incident’s root causes.

Event
Worker injures finger

Finger pinched between metal flange and wrench

Adjustable wrench slipped
Bolts were attached to metal flange
No S.O.S. Failure

Adjustable wrench opened
No S.O.S. Failure

Correct tool not available
S.O.S. Failure Maintenance and Inspection
S.O.S. Failure Training and Procedures

Worker was using adjustable wrench
Machine Tender supplied wrench for the task
S.O.S. Failure Training and Procedures
Worker not trained in proper tool to use for the job
S.O.S. Failure Training and Procedures
**Recommended Actions**

1. Provide the proper tools for production workers to use when they perform regular maintenance tasks.

2. Train production workers in the proper tools to use for the tasks they may perform and how to use them.
Education Exercise

Working in your groups and using the Lessons Learned Statement, Discussion, Analysis and Recommended Actions, answer the two questions below. Your facilitator will give each group an opportunity to share answers with the large group.

1. Give examples of ways to apply the Lessons Learned Statement at your workplace.

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

2. Of the examples you generated from Question 1, which will you pursue in your workplace? (Note: When we say something you may pursue, we mean a joint labor-management activity or a union activity rather than an activity carried out by you as an individual.)
Trainer’s Lessons Learned Success Inventory

Following a Lessons Learned (LL) session, the trainer who led the LL should complete this form. This information will: 1) Help you reflect on the successes and challenges of the session; 2) Help USW with new curriculum development; and 3) Help USW as a whole better understand how the LL Program is supporting their workers.

By reviewing LL from different sites or from other areas of their workplaces, workers are able to analyze the information and apply these lessons to their own workplaces in order to make their workplaces healthier and safer.

1. Site name (if there are participants from more than one site, please list all).

_______________________________________________________________

2. Date of LL training ___________________________________________

3. LL number used in today’s Training____________________________

4. Your name__________________________________________________

5. **Summary of Education Question 1:** Please summarize participants’ examples of ways to apply this LL Statement to their workplace.

Please continue on reverse side.
6. **Summary of Education Question 2:** Please summarize actions or recommendations participants discussed pursuing at their workplace(s).

Thank you for completing this form.
EVALUATION

Lessons Learned: Using Wrong Tool Causes Injury

Please answer the two questions below:

1. How important is this lessons learned to you and your workplace? (Circle one.) Rate on a scale of 1 to 5, with 5 being the most important.

   1   2   3   4   5

2. What suggestions would you make to improve this Lessons Learned?

   ______________________________________

   ______________________________________

   ______________________________________

   ______________________________________

   ______________________________________
End of Training Trainer’s Instructions

Please complete the information below.

Trainer’s Name _____________________________________________
(Please Print)

Date of training: ______________________________

No. of Participants:  Total _______  Hourly _______  Management ______

Location of Training:  __________________________________________

USW Local # _________________

Send:

1. This page;
2. The Education Exercise (page 8);
3. The Trainer’s LL Success Inventory form (pages 9 and 10);
4. The evaluation for each participant (page 11); and
5. The Sign-in sheet (page 13) to:

| If you are a TOP Site (excluding DOE TOP Sites) | Send to: Steve Cable  
| 2915 Gradient Drive  
| St. Louis, MO 63125 |
| All other sites (including DOE TOP Sites) | Send to: Doug Stephens  
| United Steelworkers  
| 3340 Perimeter Hill Drive  
| Nashville, TN 37211 |

Thank you for facilitating the sharing of this Lesson Learned with your coworkers.
Lesson Learned: Using Wrong Tool Causes Injury

**SIGN-IN SHEET** *(Please print clearly.)*

Class Title: __________________________ Class Completion Date: ________

Location (City, State)/Facility: _______________________________________

Grant Program: _________________ Dist. & LU #: _________________

Instructors: 1) ______________________ 2) ______________________

3) ______________________ 4) ______________________ 5) _______________

<table>
<thead>
<tr>
<th>Name (print first and last)</th>
<th>Check one:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hourly</td>
</tr>
<tr>
<td></td>
<td>Management</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>
Using Wrong Tool Causes Injury

Lessons Learned